

METHOD OF CONTROLLING A DUAL CLUTCH TRANSMISSION

ABSTRACT OF THE DISCLOSURE

A method of controlling the torque transferred across each of the two clutches of a dual clutch transmission during a two-gear positive downshift, wherein the first of the two clutches drives an initial gear and the final gear and the second of the two clutches drives an intermediate gear. The method includes the steps of determining a clutch torque and slip profile for the changeover of the clutches and determining a target engine speed profile. The torque transfer across each clutch is simultaneously controlled so that the torque output of the transmission will be linearly changed over from the first clutch to the second clutch to cause the engine to track the target engine speed profile. When the first clutch is slipping at a greater rate than the second clutch the method changes over the gears driven by the first clutch by disengaging the synchronizer of the initial gear and engaging the synchronizer of the final gear as the engine continues to track the target speed. The torque transfer across each clutch is simultaneously controlled so that the torque output of the transmission will be linearly changed back from the second clutch to the first clutch in an inversely proportional rate to continue to cause the engine to track the target engine speed profile.